



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/715,579

11/18/2003

Atsushi Harada

JP920010240US1

4754

25259

7590

10/27/2006

IBM CORPORATION  
3039 CORNWALLIS RD.  
DEPT. T81 / B503, PO BOX 12195  
REASEARCH TRIANGLE PARK, NC 27709

EXAMINER

RIZK, SAMIR WADIE

ART UNIT

PAPER NUMBER

2133

DATE MAILED: 10/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/715,579

Applicant(s)

HARADA, ATSUSHI

Examiner

Sam Rizk

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 August 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

- Response to the applicant's amendment dated 8/28/2006
- Claims 11-18 have been Cancelled
- Amended claims 1-10 have been submitted for examination
- Amended claims 1-10 have been rejected

### ***Drawings Objections***

1. In view of the applicant amended drawings filed on 8/28/2006; all objections to the drawings are withdrawn.

### ***Title Objections***

2. In view of the applicant amended title filed on 8/28/2006; all objections to the title are withdrawn.

### ***Response to Arguments***

3. Applicant's arguments see pages 8 & 9 filed on 8/28/2006 have been fully considered but they are not persuasive.
4. The Examiner disagrees with the applicant contention as cited in page 8-9 that (emphasis added):

"Regarding this limitation, Zdunek teaches (col. 1, lines 22-32) that the prior art has developed three basic and distinct coding schemes, which are block codes, convolutional codes, and interleaving, and further that in block codes (now contrasting with convolutional codes) the parity bits and information bits are sent in distinct blocks. Thus, as recognized by Zdunek, Applicant's invention and

Zdunek are fundamentally different, in that Applicant's invention provides a block code with convolutional parity bits, which is still very much a block code, whereas Zdunek provides a conventional convolutional code with bit interleaving."

The Examiner directs the applicant to several locations in Zdunek where he teaches block code with convolutional parity bit. Another point to emphasize that teaching additional interleaving scheme still makes Zdunek as prior art anticipating the instant application.

I. Zdunek in col. 1, lines (34-37) teaches (emphasis added):

"Convolutional coding schemes have been developed which convolve the parity bits with the information bits. These systems are particularly effective for eliminating random errors."

II. Zdunek in col. 2, lines (30-35) teaches (emphasis added):

"Thus, the instant coding/decoding scheme exhibits superior error correcting capability due to its combining of convolutional, block and interleaving schemes and has the capability of accepting characters of any given bit length."

III. Zdunek in col. 6, claim 4 teaches (emphasis added):

"4. The digital data encoder of claim 1 wherein said (n,k) convolutional encoder is comprised of:

a shift register of length k into which each m length character followed by k-1 flush bits are sequentially shifted and, parity bit generating means for generating predetermined parity bits dependent upon the status of one or more of the signals in said register, and wherein the storing means includes means for alternately outputting each of the m information bits followed by (n/k)-1 parity bits until all m information bits followed by (n/k)-1 parity bits are stored in one of said M output registers, said output means then outputting (k-1).times.((n/k)-1) parity bits to fill said output register."

Art Unit: 2133

5. The Examiner maintains rejection of claims 1-10 as in the office action filed on 6/1/2006.

### **Conclusion**

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Wan US patent no. 6567938 teaches convolution decoding terminated by an error detection block code with distributed parity bits.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Rizk whose telephone number is (571)-272-8191. The examiner can normally be reached on M-F 8-5.

Art Unit: 2133

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571)272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam Rizk, MSEE, ABD

Examiner

ART UNIT 2133

*SR*  
10/24/06

*Albert Decady*  
ALBERT DECADY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100